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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/919,994	08/02/2001	Rui Xie	D-6400 CIP	8016

7590 06/17/2010  
Crompton Corporation  
Benson Road  
Middlebury, CT 06749

EXAMINER
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SERGEANT, RABON A

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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06/17/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/919,994	XIE ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Rabon Sergeant	1796	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 19 May 2010.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 46-53 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 46-53 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                     | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

1. A request for continued examination under 37 CFR 1.114 was filed in this application after appeal to the Board of Patent Appeals and Interferences, but prior to a decision on the appeal. Since this application is eligible for continued examination under 37 CFR 1.114 and the fee set forth in 37 CFR 1.17(e) has been timely paid, the appeal has been withdrawn pursuant to 37 CFR 1.114 and prosecution in this application has been reopened pursuant to 37 CFR 1.114. Applicant's submission filed on May 19, 2010 has been entered.

2. Claims 46-53 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Applicants' independent claim 46 is drawn to a process that consists of distilling diphenylmethane diisocyanate monomer from a combination consisting essentially of a polyurethane prepolymer product mixture and at least one inert solvent. With this in mind, applicants' claims are indefinite, because it is unclear that the "consists of" language closes the claims to the inclusion of additional elements and process steps, in view of the subsequent "consisting essentially of" language and the "comprises" and "comprising" language set forth within claims 46 and 51-53. The use of this "open" claim language subsequent to the use of the "closed" claim language creates confusion and ambiguity as to what function the "closed" language performs and what limitations are within the scope of the claims.

Furthermore, with respect to claim 47, the language, "the diol", lacks antecedent basis.

Lastly, it is unclear if the pressure limitation of claim 46 pertains to the step of distilling or the boiling point property. If the former is the case, then it is questioned where support exists for the limitation.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 34-44 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosenberg et al. ('193).

Patentees disclose the removal of isocyanate monomers from isocyanate prepolymers, wherein solvents, which have boiling point properties that meet those of applicants' solvents, are added to the prepolymer reaction components at the start of or during prepolymer synthesis. The resulting solvent containing prepolymers are then subjected to distillation to obtain products having reduced levels of isocyanate monomers. Furthermore, the reference discloses that MDI is a suitable diisocyanate for the process. See abstract and columns 2-6, especially column 6, lines 13+. Furthermore, applicants' claimed polyols are met by the disclosure at column 4, line 40 through column 5, line 30. The use of two or more distillation units in series is disclosed at column 2, lines 51 and 52.

5. Applicants have argued that the instant claims are drawn only to the distillation of a mixture which consists only of the identified inert solvent, the products and by-products formed when MDI is reacted with a polyol, any left over starting materials of the reaction, and small quantities of materials that do not effect the basic and novel characteristics of the invention; applicants further state that there are no higher boiling solvents in the combination that is subject to distillation. In response, the examiner disagrees that the claims are limited as argued. Firstly, the claimed polyurethane prepolymer product mixture, itself, may contain the argued higher

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boiling point solvent, because there is no language that definitively excludes such a component from the polyurethane prepolymer product mixture, and it is noted that the reference clearly states that the solvent components may be present at the start of prepolymer formation; therefore, the reference discloses a polyurethane prepolymer product mixture that may contain the argued higher boiling point solvent. The “consisting essentially of” language does not serve to limit the content of the “polyurethane prepolymer product mixture” in any way. Secondly, through applicants’ use of “only” within their remarks, it appears that applicants have equated the meanings of “consisting of” and “consisting essentially of”; however, the two transitional phrases are not equivalent. “Consisting essentially of” limits the scope of a claim to the specified materials or steps and those that do not materially affect the basic and novel characteristics of the claimed invention. *In re Herz*, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). The quantity, referring to applicants’ argued “small quantities”, is not in and of itself relevant to the issue. Furthermore, there is nothing on the record that establishes that the argued higher boiling point solvent is excluded by the language, since there is nothing on the record that establishes that the presence of the argued higher boiling point solvent would materially affect the basic and novel characteristics of the claimed invention. In fact, the position is taken that the presence of the argued solvent would not materially affect the invention, since the objectives and results of the instant invention and the reference are fully comparable, if not the same.

Any inquiry concerning this communication should be directed to R. Sergent at telephone number (571) 272-1079.

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/Rabon Sergeant/  
Primary Examiner, Art Unit 1796